ENVIRONMENTAL ASSESSMENT

OR 125-98-14

A Proposal to Fully Decommission selected roads within the Umpqua Resource Area of the Coos Bay District

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This action is subject to and in conformance with the *Coos Bay District Record of Decision and Resource Management Plan*, dated May 1995, and the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* with its *Record of Decision* and *Standards and Guidelines* (Interagency, 1994).

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SECTION I
Purpose and Need for Action

Background

The Bureau of Land Management (BLM), Coos Bay District has reviewed the *West Fork Smith River Sub Watershed Analysis* (BLM, 1997) hereby incorporated by reference, and proposes to undertake some of the suggested restoration projects in regards to roads, their affects on water quality and other values. Proposed projects for the subwatershed are to decommission selected roads identified in that document.

Direction for management actions regarding these roads comes from the *Coos Bay District Final Proposed Resource Management Plan and Environmental Impact Statement* (BLM, September 1994) (RMP), the accompanying *Record of Decision* (BLM, May 1995) (ROD), and from the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Interagency, February 1994) (FSEIS; Northwest Forest Plan), its *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, and accompanying *Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Interagency, April 1994). This Environmental Assessment (EA) is tiered to both documents. These documents are available for review at the Coos Bay and North Bend Public Libraries, the Coos Bay District Office of BLM, and the Oregon State Office of BLM in Portland, Oregon.

The primary scoping process consisted of an interdisciplinary team defining the issues and alternatives to examine in detail in the EA. The public was informed of this planned EA through the Coos Bay District's *Planning Update* sent to individuals and organizations on the District's mailing list and the Coos Bay District Internet Home Page at http://www.or.blm.gov/coosbay. There were two responses by the public to this invitation to become involved.

The purpose of this EA is to assess and mitigate any potential impacts that may result if any action is implemented, and document the decision-making process for the proposed projects.

The decision to be made from this EA is to:

- Not implement the project (No Action Alternative), or
- Implement one of the alternatives as described in this document, or
- Implement one the alternatives with specific management constraints and/or mitigation measures

Geographical Area

The planning area is in the West Fork Smith River drainage, approximately 20 miles northeast of Reedsport, Oregon (maps contained in Appendix I). There are three roads identified for review within this watershed . The proposed projects would occur on land or roadways presently managed or controlled by BLM.

Issues, Concerns, and Opportunities (Identified issues)

The issues, concerns, and opportunities (henceforth referred to as "issues") were developed by the Interdisciplinary team IDT assigned to this EA. Individual summary reports from IDT specialists are contained in the Analysis Files for this EA, hereby incorporated by reference.

Internal scoping by the (IDT) identified the following issues to be considered for each road closure location.

Issue No. 1 - Habitat Connectivity

<u>Aquatic Habitat</u>
Aquatic habitat connectivity within the West Fork Smith River drainage, and the proposed roads for treatment, has been negatively impacted by road construction activities that occurred from the 1950s to the 1970s. The most significant impacts resulted from culvert installations at stream crossings. The construction technique at the time was to fill portions of the stream channel in order to provide a solid culvert base at the lowest possible cost. This resulted in the positioning of culverts at less than the natural stream gradient. Additionally, culverts installed prior to the mid 1990's were typically undersized.

The combined effects of these actions include large drops from the culvert outlet to the stream channel and high velocity stream flows through the culvert itself. Large spill heights cause the scouring of stream channels below the culvert and they prevent direct connection between the stream channel and the culvert outlet, thus creating upstream passage barriers for most aquatic organisms. Undersized culverts cause constrictions in stream flows and create high water velocities within the pipe. High velocities often prevent weak swimming/crawling aquatic organisms from passing through a culvert.

The loss of stream channel continuity can isolate small populations, limiting or preventing genetic exchange between populations, and preventing recolonization of historic or recovering habitats. If these barriers remain in place for extended periods of time, isolated populations may die out from population fluctuations, or be eliminated from an area by catastrophic changes to the stream habitat. If barriers prevent species from recolonizing recovering habitats, the viability of local or regional populations may be threatened.

Under the Northwest Forest Plan, federal land management agencies are required to meet Aquatic Conservation Strategy (ACS) Objectives. Roads within Riparian Reserves, and especially those adjacent to streams, often imports the attainment of the ACS Objectives relating to the maintenance of spatial connectivity within watershed and stream bank and bottom integrity.

Terrestrial Habitat

Terrestrial habitat connectivity within the West Fork Smith River drainage, and the proposed roads for treatment, has been negatively impacted by roads. Roads have increased the amount of edge habitat, increased fragmentation, and have created physical barriers to movement and dispersal.

Harris (1984) reported that edge effects can alter climatic factors up to three tree heights (approximately 600 feet) into the adjacent stand. Another study reported that microclimate edge effects persist into the adjacent stand for 525 feet (Lehmkuhl and Ruggiero 1991).

Edges give the generalist wildlife species an advantage over species dependent on interior habitat.   For example, birds nesting on the edge can experience higher reproductive failure rates due to predation and nest parasitism (Noss and Cooperrider 1994, and Gates and Gysel 1978). Brittingham and Temple (1983) reported that 67 percent of the nests within 328 feet of an edge were parasitized by brown-headed cowbirds. Edges have also encouraged range expansion of some lesser desirable wildlife species (i.e., brown-headed cowbird, and barred owl).

Ruggiero et al. (1994) reported that fragmented, dissected or isolated habitats have undesirable effects on all forest carnivores, especially martens and fishers. Habitat fragmentation affects carnivores in two ways. First, disturbed and non-forested habitats attract generalist species such as coyotes and great horned owls which are successful competitors for prey. Secondly, fragmented habitats will not provide connectivity and interspersion over geographic areas large enough to benefit individuals or join individuals into populations.

The road surface is a physical barrier to small-bodied, ground-dwelling wildlife such as small mammals, snails, and butterflies (Bennett 1991 in Gibbs 1998). Roads also cause direct mortality. Fahrig et al. (1995) reported that the density of frogs and toads decreased due to direct mortality from increased traffic intensity. Small wildlife species may not cross a road bed, even if it is closed to vehicles, due to the change in surrounding conditions (Noss and Cooperrider 1994). This is supported by Gibbs (1998) who reported that amphibians are more likely to move across a forest-open land edge than across a forest-road edge. Thus, the presence of the road surface or fill could provide an unpassable barrier for amphibians such as the red-backed salamander. In addition, amphibians move shorter distances and have relatively poorer dispersal capabilities than other vertebrates, so a small scale disturbance such as a road can have a large impact on the local population and may limit recolonization capabilities (deMaynadier and Hunter 1995). This situation can fragment populations into small units that are at risk for extirpation. Amphibian populations are a good indicator for those species dependent on dispersal and landscape connectivity as they are prone to local extinction (Gibbs 1998).

Issue No. 2 - Large Material Delivery

Due to the extensive road network present on public and private lands within the West Fork of Smith River, most perennial streams are crossed multiple times by roads, substantially affecting the quality and continuity of aquatic ecosystems. The proposed roads for treatment are included in that network. Coast Range streams depend heavily on debris slides and torrents for the recruitment of instream material, especially coarse sediment and wood, to provide aquatic habitat components. This large material is also critical in the dissipation of stream energy. Roads and stream crossing structures function as dams, primarily during storm events, that constrict flow through a single, narrow outlet. This damming effect prevents the transportation of material down the channel and limits the function of the floodplain where present. These structures tend to be constriction points in the channel and cause deposition and channel widening at the inlet and increased velocities and scour at the outlet. The delivery of large material to the stream channel is also prevented when a debris torrent or slide is stopped by the roadbed. These effects do not meet the ACS objective of maintaining the patterns of sediment and large wood transport.

Issue No. 3 - Road Densities

Road densities within the West Fork Smith River drainage exceed the 2.9 miles per square mile per watershed target as prescribed in the Coos Bay District RMP. Roads throughout the subwatershed are unrestricted in use and open to any type of vehicular traffic. See table below for the miles and densities of roads (by surface type) for the West Fork Smith River Subwatershed.

		BLM ADMINISTERED LAND		NON BLM LANDS		SUBWATERSHED TOTALS	
		ACRES 11586.6 SQ MILES 18.1		ACRES 5458.3 SQ MILES 8.5		ACRES 17044.9 SQ MILES 26.6	
Control of Road	SURFACE TYPE	ROAD MILES	ROAD DENSITY miles/sq mi	ROAD MILES	ROAD DENSITY miles/sq mi	ROAD MILES	ROAD DENSITY miles/sq mi
BLM	BST	16.2	0.9	8.2	1.0	24.4	0.9
	ROC	34.1	1.9	7.4	0.9	41.5	1.6
	NATURAL	6.9	0.4	1.2	0.1	8.1	0.3
	UNKNOWN						
PRIVATE/OTHER	BST						
	ROC	5.3	0.3	12.1	1.4	17.4	0.7
	NATURAL	1.2	0.1	3.1	0.4	4.3	0.2
	UNKNOWN						
blm,prt,other	No data	4.0	0.2	13.7	1.6	17.7	0.7
TOTAL		67.7	3.7	45.7	5.4	113.4	4.3

Table 1. West Fork Smith River Subwatershed Road Information.

High road densities have an adverse affect on wildlife due to fragmentation, harassment, and direct mortality or injury. Fragmentation is discussed under Issue No. 1 - Habitat Connectivity. Harassment includes vehicle traffic, noise levels, and poaching. Open roads disturb wildlife in general (Thomas et al. 1976) and these effects have been especially well documented for elk. In particular, Thomas (1979) and Wisdom et al. (1986) showed that the effectiveness of deer and elk habitat is adversely influenced by the presence of open roads. Cole et al. (1997) showed that there are decreased daily elk movements and home range sizes behind closed roads as the animals are not subjected to human disturbance. Wisdom et al. (1986) reported that road density is one of four variables used to calculate habitat effectiveness for elk in western Oregon and that having " . . . completely restricted or extremely limited access" is a key factor for retaining this habitat.

Vehicle traffic creates an artificial distribution of big game species as disturbance from high road use can force wildlife to move away from the road into lower quality habitat. Pope and Anthony (1994) reported that Roosevelt elk tend to avoid usable habitat within 164 feet of open roads. Lyon and Ward (1983) list 12 other studies that show a consistent year-round decrease in elk use of habitat adjacent to roads.

High open road densities also increase visibility and vulnerability of big game throughout the year. Poaching was a dominant source of mortality on Roosevelt elk in the Oregon Cascades (Stussy et al. 1994). Cole et al. (1997) reported an increase in Roosevelt elk survival rates due to decreased poaching on limited access roads.

Issues Identified and Eliminated from further Analysis

Some issues were identified during this and previous environmental assessments, but were eliminated from analysis as not being significant, not implying different actions, or not requiring other mitigation, and thus not suggesting different alternatives.

<u>Environmental Justice</u>
These roads are not used by special forest product harvesters; therefore we would not expect any impacts on non-English speaking minority populations or low income populations.

<u>Port-Orford Cedar Root Rot</u>

The project areas are outside the natural range of POC and therefore not assessed.

<u>Noxious Weed Control</u>

While not considered an issue noxious weed control measures are discussed in this document, and incorporated into the design features.

<u>Ripping of Roadway</u>

Ripping was evaluated as a method for road decommissioning. Ripping is the reprocessing of the material in the top 12 inches of the roadway using typical ripper blades on a grader or bulldozer. Ripping loosens the upper surface of the road to allow small plants or grasses to germinate. Ripping may or may not be sufficient to allow large plants or trees to germinate depending on the depth and degree of compaction. Ripping was determined to be ineffective with regards to the objectives of this environmental assessment and was therefore dropped from further consideration.

Objectives

- Within the road corridors   Restore vegetative growth to connect the terrestrial habitat.

- Reduce aquatic and terrestrial barriers to movement and dispersal of local species including fish, mammals, amphibians, and invertebrates.

- Decrease the road density of BLM controlled roads on lands in the West Fork Smith River Subwatershed to help achieve the RMP target of 2.9 miles per square mile. This reduction will also:

    - Decrease disturbance of wildlife through road closures.

    - Decrease mortality/injury to wildlife species from vehicle traffic.

Permits, Licenses, and Entitlements Necessary to Implement the Projects

No Federal permits, licenses, or entitlements are required for these projects. The removal of culverts from actively flowing streams will occur only during the Oregon Dept. of Fish and Wildlife instream work period (July 1- Sept. 15).

Section II
Description of Alternatives Including the Proposed Action

Development of Alternatives

An interdisciplinary (ID) Transportation Management Plan was completed for the West Fork Smith Subwatershed as part of the watershed analysis (page 64 and 65). For all BLM controlled roads, each was evaluated as to the need for continued access or was recommended for closure. As a result, roads recommended for closure were prioritized according to their impacts to certain environmental factors. Two of the roads selected also contained access to small portions of private lands and the landowner was contacted, and permission received, to decommission all or portions of the roads.

For each road considered, the ID team conducted field tours of the sites, discussed the type of closure desired, standards that would apply, issues of concern to be resolved or mitigated, and potential solutions. Alternatives proposed were variations of road closure methods and include the No Action alternative.

Alternatives Considered

- ✧ No action
- ✧ Full Decommission of Road (remove culverts, treat surface, tank trap)
- ✧ Alternative A: Decommission road (tank trap only)
- ✧ Alternative B: Obliteration (full site restoration)

A summary of the methods involved in each alternative is shown below:

Table 2. Table of Alternatives by Method.

	Alternatives			
Methods	**No Action**	**Proposed Action Full Decommission**	**Alternative B Decommission**	**Alternative C Obliteration**
Culvert removal Machine or hand		X		X
Subsoiling		X		
Seeding and Mulching		X		X
Planting		X		X
Tank Trapping		X	X	
Back Filling of Road/ Slope				X

No Action Alternative
Under the No Action Alternative, the Coos Bay District would continue normal road maintenance. Minor repairs might include cleaning culverts and ditches, moving some slide material to allow traffic to pass at some of the sites, blocking roads with barriers at some sites, or other work considered routine road maintenance.

Proposed Action: Full Road Decommissioning

The road segments would be closed with a permanent barrier (i.e. tank trap, boulders, etc.) and would not receive future maintenance. Fills in stream channels and potentially unstable fill areas would be removed to restore natural hydrologic flow, however cross drain culverts may be left in place depending on ID team review. The roadbed would be subsoiled and may be planted to reestablish vegetation. Stream crossings and noxious weed sites would also be seeded and mulched. Noxious weeds within the roadway would be removed by pulling. When equipment is used for removing Scotch Broom, it would be washed before moving to other sites that are free of infestation. Roads receiving this level of treatment would not be used at any time in the future.

The following table lists the proposed roads and the selected combination of the methods for closure:
Table 3. Proposed Action by Road and Method.

Road name and number	From Mile Post	To Mile Post	Length miles	No of culverts to remove	Culvert removal method*	Road surface treatment method*	Erosion proofing treatment*	Road entrance treatment*
Crane Creek 20-9-15.1	0	1.7	1.7	7	Machine	Subsoil	Seed and Mulch	Tank trap
Moore Creek 20-9-11.0	1.0	2.1	1.1	16	Machine	Subsoil	Seed and Mulch	Tank trap
Beaver Creek 20-9-1.2	0	1.0	1	13	Machine	Subsoil	Seed and Mulch and Plant	Tank trap

* See Methods below for description of actions.

All actions to close roads will be in conformance with the following:

- Aquatic Conservation Strategy Objectives (ACS) (as detailed in the Northwest Forest Plan pgs . B-9 to B34)
- Other legislative mandates for the BLM to manage lands and resources such as the: Clean Water Act, National Environmental Policy Act, Federal Land Policy and Management Act [FLPMA], Oregon and California Land Act, and Endangered Species Act, hereby incorporated by reference
- Oregon Administrative Rules and Statutes including the Forest Practices Act, hereby incorporated by reference
- Coos Bay District RMP Best Management Practices, Appendix D

Monitoring Proposed Action

Inspection of work and conformance with contract specifications will be accomplished by the Project Inspector though the established Engineering processes on the District.

Project effectiveness monitoring will be performed by the appropriate disciplines in year 1 and 5. Year 1 is the year following the work.

Alternative A: Road Decommissioning

The road segment would be closed to vehicles on a long-term basis with a permanent barrier (i.e. tank trap, boulders, etc.) and would not receive future maintenance. The road would be left in an erosion -resistant condition by establishing cross drains or water bars as needed, removing fills in stream channels, and excavating potentially unstable fill areas. The roads would *not* be ripped or subsoiled. These roads would not have vehicle activity until the next commercial harvest opportunity, generally for a 10 to 20 year time frame. The road segment would still be tracked in the road inventory with a maintenance level 1 (custodial maintenance primarily to maintain drainage).

Some decommissioned roads may be closed with a guard rail, gate or similar type barrier. These road segments would have vehicle activity sometime within the next 3-5 years to conduct silvicultural treatments. The road would be open to traffic for up to 2-3 weeks and then closed until the next commercial harvest opportunity, generally for a 10 to 20 year time frame.

Alternative B: Road Obliteration (Full Site Restoration)

The road segment would be completely obliterated, reclaiming the right-of-way. This would involve removing all culverts and fill material. Fill material would be placed on the existing roadbed in an attempt to reestablish the original ground line (i.e. re-contoured) so that no evidence of the road would exist. Exposed soil will be revegetated with trees or other native species. This would not be recommended for roads in sensitive or unstable areas where potential for damage to the watershed is high. Roads receiving this level of treatment would not be used at any time in the future and would be removed from all inventories.

Methods For Decommissioning

Removal of Culverts and fills by Machine

Culverts to be removed shall have the channel restored to the estimated depth and width of the original stream. All excavated fill material shall be placed on the existing roadbed and outsloped to facilitate drainage. Side slopes adjacent to the stream channel will be shaped (outsloped) to prevent sedimentation and may be mulched. A normal culvert removal operation would involve a backhoe or an excavator for reshaping the bank.

Estimated cost: $1,000 per site
Fills greater than 10 feet deep would be greater

Removal of Culverts and fills by Hand

Culverts to be removed would have the channel restored to the estimated width of the original stream. The depth of the new channel would be to the depth of the culvert which was removed. All excavated fill material shall be placed on the existing roadbed and outsloped to facilitate drainage. Side slopes may be mulched. Removal of culverts by hand is difficult to estimate as historical costs are not available

Estimated cost: (1-2) days x 3 laborers x $300/person/day = $900 to $1800 per site

Subsoiling of Roadway

Subsoiling reprocesses the material in the top 18-30 inches of the roadway using a crawler or self-drafting winged subsoiler with independent self-extracting shanks. Subsoiling would allow vegetation, including trees, to establish in the treated roadbed. Subsoiling is ineffective in rock.

Estimated costs: $1,500/mile/pass

Seeding and Mulching of Roadway

Mulching is the application of a District approved seed mixture, fertilizer and weed-free straw mulch on a designated roadway. Commercial products would be used in lieu of straw if they can be demonstrated to function similarly.

Estimated cost: $2000/mile

Tree Planting of Roadway

Trees may be planted in the treated roadway. Tree species would be selected to meet project objectives.

Tank Trapping or Boulder Configuration

A tank trap or boulder configuration would be installed at the entrance of the road to prevent vehicles from entering. Typical designs for tank traps include a 4' deep x 6' wide hole across the width of the road. The removed material is placed in the front of the hole to prevent vehicles from driving into it. Boulders when used for barrier shall be large in the area of 3' in diameter.

Estimated cost: $250/each.

Obliteration of Roadway

The road segment would be completely obliterated, reclaiming the right-of-way. This would involve removing all culverts and fill material. Fill material would be placed on the existing roadbed in an attempt to reestablish the original ground line (i.e. re-contoured) so that no evidence of the road would exist.

Estimated cost: unknown

The table below describes the effectiveness of each of the decommissioning methods related to the identified issues.

Table 4. Effectiveness of each decommissioning method related to identified issues.

	Issues			
	Habitat Connectivity		**Large Material Delivery**	**Road Density**
Methods	Aquatic	Terrestrial		
Hand removal of culverts and fills	fully effective*	n/a***	effective**	effective
Machine removal of culverts and fills	fully effective	n/a	fully effective	effective
Subsoiling	n/a	fully effective	n/a	effective
Seeding and Mulching	n/a	effective	n/a	n/a
Planting	n/a	fully effective	n/a	n/a
Tank Trapping	n/a	effective	n/a	effective
Obliteration of roadway by backfilling of template	fully effective	fully effective	fully effective	fully effective

*fully effective = achieves all objectives and design features of the related issue
**effective = achieves the primary objectives but not all design features of the related issue
*** n/a = not applicable to the issue

SECTION III
Affected Environment

This section describes the environmental components that could be affected by the Proposed Action, if implemented. This section does not address the environmental effects or consequences, but rather serves as the baseline for the comparisons in Section IV - Environmental Consequences. The data for this section was developed in the watershed analysis process for the *West Fork Smith River Subwatershed*.

Aquatic Habitat/ Aquatic Species (including Special Status Species)

There are a variety of native anadromous and resident fish occurring in the West Fork Smith River watershed. The anadromous stocks include fall chinook salmon, coho salmon, winter steelhead trout, and sea-run cutthroat trout. Common resident fish include the cutthroat trout, brook lamprey, and a diversity of shiner, dace and sculpin species. The following table lists the indigenous fish species and their current status as listed by the ODFW**:**

Anadromous fish species	Status
Fall Chinook Salmon	Stable population.
Coho Salmon	Documented depressed populations; Federally listed Candidate.
Winter Steelhead	Suspected declining population; Federally listed Candidate.
Sea-run Cutthroat trout - Umpqua Basin stocks	Suspected declining population; Federally Listed as Endangered.
Pacific Lamprey	Proposed sensitive (statewide).
Resident fish species	
Resident Coastal Cutthroat Trout	Suspected declining population.
Western Brook Lamprey	Status not listed.
Redside Shiner	" " "
Speckled Dace	" " "
Coast Range Sculpin	" " "
Prickly Sculpin	" " "
Riffle Sculpin	" " "
Reticulate Sculpin	" " "

Of the 175 "at-risk" Oregon anadromous fish stocks listed in Table V-C-3 in *Forest Ecosystem Management Assessment Team* (USDA; USDI 1993), hereby incorporated by reference, three occur within the proposed treatment area. The Umpqua Basin cutthroat trout is currently listed as “Endangered” under the Endangered Species Act (ESA), and the Oregon coastal coho salmon and steelhead trout are listed as a Candidate species under ESA.

The majority of the above species, as well as amphibians and aquatic insects, are highly dependent on the smaller tributaries (third through fifth order) for reproduction, growth, and survival.

Tributary streams provide the largest amounts of substrate and the widest variety of rearing habitats for the multitude of aquatic species. Water volumes are generally less, and in-channel complexity is greater, thus offering increased cover and survival potential. Primary and secondary production, via algae and macroinvertebrates (insects), is thought to be higher due to the presence of organic debris accumulations which would in turn affect the amount of food available for consumption by both aquatic and terrestrial species. There are two identified and two potential streams that are currently inaccessible to upstream migrating fish due to Crane and Moore Creek Roads. In addition, several other culverts are impassable to amphibians and insects.

Stream Channels, Wetlands, and Riparian Habitats

The stream channels and floodplains within the project areas are effected by existing roads and culverts. The roads on both Crane and Moore Creeks have stopped debris slides and prevented the delivery of coarse material to the stream channels. The culverts constrict stream channels causing substrate deposition at the inlets, increased water velocities within the structures, scour at the outlets and prevent the movement of coarse material downstream.

Hydrology

The hydrology within the project area was effected by the original construction of the roads. These effects were due primarily to the removal of vegetation, ditching and soil compaction. The annual and peak flows were increased and the timing of peak flows was altered. Low flows were probably not effected.

Wildlife Species Habitat and Occurrence (including Special Status Species)

The roads proposed for closure all occur within riparian areas. Riparian areas are one of the most important habitats for wildlife. Brown (1985) reports that 359 of 414 (87 percent) wildlife species in western Oregon and Washington use riparian zones or wetlands during some part of their life cycle. Riparian zones provide key habitat components including food, water, shelter, high moisture content, and complex plant community structure. They also provide travel corridors and dispersal routes for many wildlife groups. Some groups such as aquatic and amphibian species are found only in riparian areas. Other species are not dependent on riparian habitat but tend to use it to a greater degree than upland areas (Oakley et al. 1985). Maintaining the integrity of riparian vegetation is important for riparian-dependent organisms including amphibians, arthropods, mammals, birds, and bats (FEMAT 1993).

Birds

The occurrence and habitat for the Northern spotted owl and marbled murrelet for the three roads is as follows:

Crane Creek Road is located within 0.25 miles of a marbled murrelet occupied site and is within a Critical Habitat Unit for the marbled murrelet. It is not within 0.25 miles of a Northern spotted owl site center. It is not within a Critical Habitat Unit for the Northern spotted owl

Moore Creek Road is located within 0.25 miles of a marbled murrelet occupied site and suitable habitat. It is within a Critical Habitat Unit for the marbled murrelet. It is also within 0.25 miles of a Northern spotted owl nest site and suitable habitat. The road in Sections 2 and 3 are in a Northern spotted owl Critical Habitat Unit.

Beaver Creek Road is not within 0.25 miles of a Northern spotted owl site center.   The road is not within 0.25 miles of a marbled murrelet occupied site. It is within 0.25 miles of suitable habitat and is within a Critical Habitat Unit for both species.

The roads are not within 0.50 miles of any bald eagle nest or other key feature. Use by peregrine falcons is unlikely as there are no cliffs in the immediate area. Other Special Status Species which could occur in the vicinity of the proposed harvest are listed in the RMP (USDI 1995, Appendix C). With the exception of the Northern pygmy owl and Northern saw-whet owl, there is no documentation of the presence of other Special Status bird species within the drainage.

Riparian areas provide structural components important to birds for feeding, breeding, nesting, roosting and perching. Food sources include aquatic plants, invertebrates, fish and flying insects. Many birds utilize mature and older aged forests for nesting. Birds also utilize shrub species for nesting, cover, and foraging. These areas are key vegetive communities for both resident song birds and many species of neotropical migratory birds.

Mammals

Many mammals are linked to riparian zones. Wildlife species forage in the streams for aquatic organisms including fish, crawfish, mussels, clams, and other invertebrates. Wildlife also forage on the fruits of herbaceous shrubs in the riparian area including huckleberry, salmonberry, salal, and elderberry.

Beaver activity has been documented along all three stream systems. Beavers utilize the stream systems where the gradient is lower and the riparian area provides woody and herbaceous plants for forage. The riparian areas of large stream systems would provide habitat for the river otter and mink. Other species that commonly forage for aquatic species include raccoon, black bear and bobcat.

It is highly unlikely that the American marten or fisher would be present due to the small size and fragmentation of older aged stands in the drainage. Cougars have been documented on Moore Creek and should be present in the mature timber stands near the other project sites. The subwatershed is outside the known range of the ringtail. The Western gray squirrel and white-footed vole could occur in the area though no sightings have been recorded. The white-footed vole is strongly associated with riparian alder / small stream habitat.

Roosevelt elk and black-tailed deer are present in good numbers within the subwatershed. In the

Coast Range, key habitat needs are foraging areas, hiding cover, and thermal cover. High open road densities cause human disturbance, harassment, and direct mortality of these two species.

There are approximately 10 bat species that could occur in the area. Special Status Species include: Yuma myotis, long-legged myotis, fringed myotis, long-eared myotis, and Townsend's big-eared bat (Csuti et al. 1997).

Amphibians and Reptiles

A group of concern for this analysis is the amphibians and reptiles including five Special Status amphibians and two reptile species. Species associated with the aquatic system include: Southern torrent salamander, Pacific giant salamander, red-legged frog, and tailed frog. Western toads are associated with forest or shrub areas, and utilize shallow, slow water for breeding. Decayed down logs (preferably with bark intact) provide habitat for the clouded salamander. Dunn's salamander, red-backed salamander, and Pacific treefrog utilize stream edges that contain down logs and rocks for cover. Northwestern salamanders, roughskin newts, and Pacific treefrogs lay their egg masses in standing water including ponded water on road surfaces. The majority of these amphibians require the stream system for dispersal and migration. The subwatershed is most likely out of the range of the common kingsnake, but sharptail snakes may be present.

Survey and Manage and Protection Buffer Species

There are no known Strategy 1 - Survey and Manage sites for terrestrial wildlife near the road locations. Surveys were not conducted for Survey and Manage Category 2 species as the work would be conducted on previously disturbed ground. None of the ROD protection buffer species are likely to occur at the Proposed Action sites.

Port-Orford Cedar Root Rot

Port-Orford cedar root rot (*Phytopthora lateralis*) (POC) was unintentionally introduced in the northwest as early as 1923, causing 100% mortality in some cases. Historically, Port-Orford cedar (*Chamaecyparis lawsoniana*) has been a component of the forests within portions of the Coos Bay District, mostly in the Myrtlewood Resource Area. It comprised approximately 2-13% of forest stands and was found in a co-dominant understory position. POC in many watersheds is susceptible to the disease, which is fatal to the host tree. A primary means of introducing this disease into new locations occurs when soil infected with *Phytopthora lateralis* spores is transported to new locations via the tires or other parts of a vehicle. The infected soil contaminates live POC along the transportation corridors.

From this new infection, spores move primarily downhill from one live POC to another in flowing water and, to a lesser extent, in all directions by root contact or animals. Therefore, the POC most likely to be infected and in turn transmit the disease occur along roads and in riparian areas where they come in contact with flowing water. These spores can only infect and reproduce on live POC roots. Once POC roots are dead, the spores cannot infect the root or produce new spores.

Port-Orford cedar is not naturally found in this area as it is outside the natural range of POC and accordingly was not selected as a major issue.

Pacific yew is also susceptible to infestation.

Botanical Resources (including Special Status Species and Noxious Weeds)

No special status plant species or habitat is known to occur within the proposed project areas.

The existing noxious weeds of concern are Scotch and French brooms occurring along the roadsides which are likely seed sources to invade areas currently uninfected (especially freshly disturbed sunny sites).

Soils

The West Fork Smith River drainage is located in the Coast Range physiographical province. The restoration sites are located within the Quaternary alluvium geological unit on flat lying floodplains. The geological materials associated with the soils of the area are developed from the Tyee Formation. The Tyee Formation is composed of rhythmically bedded sandstone and siltstone and tends to have high ground water in some areas, rapid runoff, and steep slopes.

The soils found within the West Fork of the Smith River Restoration Sites are the Damewood-Bohannon-Umpcoos complex, the Preacher-Bohannon-Blachly complex, and the Preacher loam. Specific soil data can be obtained from the February 1994 Douglas County Area, Oregon Soil Inventory. Additional soil information can be found in the analysis file.

Life, Safety, and Health

The current roads lack maintenance and over time may have features which will be unsafe for vehicle traffic. Closing the roads reduces the potential of the public to access these areas. The public will still be able to enter the areas on foot.

SECTION IV
Environmental Consequences

This section provides the scientific and analytic basis for comparing the No-Action and Proposed Action alternatives described in Section II. The potential short- and long-term impacts to the affected resources are discussed here for each project type, as it relates to the issues for each alternative. No irreversible or irretrievable commitment of resources have been identified for either of the alternatives.

Environmental Impacts to Critical Elements of the Human Environment

Examination has shown the following critical elements of the human environment to be *unaffected* by any of the projects.

- Air Quality
- Areas of Critical Environmental Concern
- Cultural Resource Values *
- Prime or Unique Farmlands
- Native American Religious Concerns
- Hazardous Materials & Solid Wastes *
- Wild & Scenic Rivers
- Wilderness Values

* These require specialist review; reports are located in the appendix or Analysis file.

No Action Alternative

No road closures will take place with this alternative. BLM road maintenance would continue at its current level, as identified in the ROD, including cleaning plugged culverts and ditches and grading the road.

Aquatic Habitat/ Aquatic Species (including Special Status Species)

<u>Direct and Indirect Effects</u>
Under this alternative, ***aquatic habitat connectivity*** would not be restored. Several aquatic species, including the Endangered cutthroat trout, would not be able to access historic habitats above impassable culverts. The survival and reproduction of local populations could possibly decline if individuals remain limited to mainstem habitation. Observations following the flood of November 15-17, 1996 showed many salmonid juveniles dead along mainstem stream banks. It is likely that losses would have been reduced if access into smaller tributary streams above culverts had been available. In addition, the ESA states that “it is the responsibility of the agency to carry out programs for the conservation of threatened or endangered species” (Section 7 (a), (USDI

1988). For the Endangered Umpqua Basin cutthroat trout, and the candidate coho salmon and steelhead trout, following this alternative would not fulfill agency responsibilities.

Cumulative Effects
Aquatic species having restricted access to historic habitats have the likelihood of becoming proposed or listed species in the future. Currently listed or proposed species run the risk of receiving more severe listings (Proposed to Threatened or Threatened to Endangered). Limiting the availability of fish species to move in and out of the tributary streams places added importance to mainstem rearing and spawning habitat. Given the poor to fair condition of most mainstem habitats and riparian areas, it is unlikely that optimum habitats will be available for at least several decades. Due to low numbers, sensitive aquatic species populations may decline and be unable to withstand natural catastrophic events such as flooding or drought.

Stream Channels, Wetlands, and Riparian Habitats

Direct and Indirect Effects
Roadbeds within the riparian area would remain compacted and relatively unvegetated. Streams would remain constrained by roads and ***large material delivery*** would continue to be prevented. Deposition above and scour below culverts would continue. No direct affects to floodplains would be expected to occur.

Cumulative Effects
Roadbeds within the riparian area would remain compacted and relatively unvegetated. Not removing culverts from perennial stream crossings would prevent debris torrents from reaching stream channels and contributing large material necessary for habitat development. Downstream habitats would continue to be deficient in large material and would not return to pre-management conditions until the culverts and road fills failed.

Hydrology

Direct/Indirect and Cumulative Effects
The annual and peak flows would continue to be elevated due to the removal of vegetation through road maintenance and the runoff would be increased by the compacted road surface.

Wildlife

Direct and Indirect Effects
Under the No Action Alternative the three roads would remain classified as open. Vehicle traffic would be prevented on Crane Creek due to the existing slides. The slides could be removed by either of the landowners which would then allow vehicle traffic. Moore and Beaver Creek Roads would have vehicle traffic along their entire length.

Terrestrial habitat connectivity would not occur on any of roads due to the lack of vegetative growth. The compacted roadbeds would prevent vegetative growth of trees and large woody shrubs in the road prism. Any vegetation that did begin to grow in the prism would be halted or stunted due to vehicle traffic.

These three roads would continue to count toward the open ***road density*** totals and the watershed would continue to be above the RMP goal for ***road density***. Wildlife would continue to be negatively affected by fragmentation and harassment. Individual mortality/injury would be a negative affect that would occur over the long-term as the roads would continue to be open to vehicle traffic.

Cumulative Effects

If federally maintained roads and stream crossings throughout the landscape continue to function as barriers to wildlife movement and dispersal, populations of affected species are likely to experience further declines. Although adult amphibians are capable of overland travel, research strongly suggests that forest roads are serious barriers to overland migration for many species (deMaynadier and Hunter 1995). Species such as the Southern torrent salamander would remain effectively isolated from adjacent populations. Even species such as Pacific giant salamanders and tailed frogs which are capable of overland travel as adults, would be at much greater risk of mortality from hostile environmental conditions, predation, or vehicle traffic. Retaining the road prism and associated culverts in their current conditions would effectively isolate many wildlife species into small populations. (See Fisheries for further information on *aquatic connectivity*.)

Aquatic Conservation Strategy (ACS) Objectives

This alternative would not help to attain ACS objectives. Leaving culverts in place would not restore the natural bank and bottom contours of streams, the spatial and temporal connectivity of aquatic and terrestrial habitats, or the timing, storage and transport of sediments until the culverts plugged, rusted or failed in some manner. The restoration of infiltration rates which influence in-stream flows and subsequent patterns of sediment, nutrient and wood routing would not occur as the roads would be routinely maintained. The species composition, structural diversity and habitat of riparian areas would not be restored as the roads would be continue to be compacted and used by vehicles which would not allow vegetation to grow.

Port-Orford Cedar Management

Port-Orford cedar is not in this area therefore there are no affects for this alternative.

Botanical Resources including Noxious Weeds

Direct, Indirect, and Cumulative Effects

Noxious weeds on the roads would continue being a seed source and spreading at current/higher rates due to invading and becoming established on the new, freshly disturbed, slide paths and debris piles. If the roads are maintained in an open condition these weeds will persist and can be spread by passing vehicles. If the roads are allowed to grow over then these weeds could become shaded and die. The seed beds will remain viable for many years, possibly up to 80 years, and can germinate in response to disturbance or increased sunlight.

Soils

No direct or indirect effects would be anticipated

Life, Health and Safety

No change in existing conditions would occur.

Proposed Action: Full Road Decommissioning

Aquatic Habitat/ Aquatic Species (including Special Status Species)

<u>Direct and Indirect Effects</u>
Under this alternative, ***aquatic habitat connectivity*** would be restored through the removal of culverts. Allowing aquatic species the opportunity to access their historic habitats would help to ensure maximum habitat usage by all life history stages. Those species that are currently threatened or candidate species would have improved opportunities for reproduction and survival when given access to smaller tributary streams.

It is likely that there would be some immediate sedimentation downstream due to the removal of the culverts. The duration should not last more than 2-3 days. An additional influx of sediment may occur following the first rain event in the fall due to disturbances at the site. It is unlikely that this sedimentation would significantly affect aquatic species near the removal site.

Although there would be minor impacts to listed fish species, a Biological Opinion dated March 18, 1997 and letter of concurrence was received from National Marine Fisheries Service (NMFS) approving road decommissioning. NMFS places high priority on the full decommissioning of stream bottom roads.

<u>Cumulative Effects</u>
All aquatic species would have the opportunity to access historic habitats. Survival and reproduction opportunities would be improved over the long term, and, combined with other management strategies, populations of sensitive species could increase. All aquatic species would have the increased ability to withstand natural events (flood, drought) that lead to population declines.

Stream Channels, Wetlands and Riparian Habitats

<u>Direct and Indirect Effects</u>
Full decommissioning of stream bottom roads would meet Aquatic Conservation Strategy and Late Successional Reserve objectives by restoring spatial connectivity within the watershed, restoring the physical integrity of stream banks and bottoms and restoring the sediment regime related to ***large material delivery***.

The design features of the proposed action and use of Best Management Practices (BMP's) (Appendix H, RMP, 1994) during culvert removal would reduce many potential adverse effects to stream channels and water quality. Low level sedimentation resulting from exposed soil where the culverts are removed may occur. Most of the sediment would be delivered in the first rain event of the fall after culvert removal. There should be negligible erosion or sedimentation once vegetation is established on these areas. Removal of some riparian red alder trees and brush may occur in the vicinity of the culvert removal site, but this should not significantly impact soil and hillslope stability. Streams would no longer remain constrained by roads. Redistribution of stream substrates would occur as the natural gradient of the stream returns.

Cumulative Effects
Over time, stream channels where culverts were removed will return to their natural gradient. ***Large material delivery*** would occur and would not be prevented by roads or culverts. Downstream floodplain and instream habitats would follow natural development patterns.

Hydrology

Direct/Indirect Effects
The soil compaction would be greatly reduced and infiltration rates would increase through the roads. The concentration of flows due to the ditches and compacted surfaces would be immediately eliminated

Cumulative Effects
The annual and peak flows will return to pre-disturbance conditions more rapidly due to the elimination of ditches, soil decompaction, revegetation and the filling of cut slopes.

Wildlife

Direct and Indirect Effects

Removing culverts - machine: This technique would restore the stream channel to its original grade, depth and width. Negative impacts to wildlife from this method would include short term noise disturbance (especially for the Northern spotted owl and marbled murrelet) and impacts related to machinery (discussed below). This technique would cause habitat disturbance/degradation to existing slides, downed trees or boulders that currently block access in the roadway. This would be minimized by utilizing the smallest machinery to adequately complete the project, and by placing the structures back onto the roadway when leaving the site. The machinery could also be used to place additional downed trees or structures onto the road to assist in habitat connectivity.

Removing culverts - hand: This technique would restore the stream channel to its original grade, depth and width. This would be limited to small and mid-size structures. It would not be economically feasible to have hand crews taper or structure a channel with a large culvert, or to remove and place the associated fill. Hand crews would have minimal disturbance to existing slides, downed trees or boulders that currently block access to the site. Noise levels relating to seasonal restrictions for the Northern spotted owl and marbled murrelet would not be an issue.

Subsoiling: It may take 30 years for trees and shrubs to naturally revegetate on compacted soils. By using multiple passes of a winged subsoiler to break up compacted access road surfaces, the time required for vegetation to reestablish should be substantially reduced, allowing the riparian habitats to recover more quickly. Subsoiling breaks up the roadway to a deeper depth than ripping, so subsoiling would provide greater insurance that vegetation would be able to successfully establish in the roadway. This should provide the vegetative ***terrestrial connectivity*** needed for wildlife species of concern.

Subsoiling would also enable the ground to absorb water and would minimize overland water flow. This would preclude the need for cross drains or waterbars and thus the need to maintain these structures. Since there would not be structures that would require maintenance, there would not be a risk of structure failure.

<u>Mulching:</u> Mulching would decrease the risk of erosion adjacent to stream crossings. This technique would establish vegetation faster than natural recruitment. Mulching could have negative effects by introducing noxious weeds and off-site plant species.

<u>Planting:</u> The need for planting depends on the canopy cover over the road from the adjacent stand, available seed sources, available growing space (light, soil, space etc.), and existing vegetation. Planting conifer trees in the subsoiled roadway would establish tree presence at a faster rate than with natural recruitment. As brush can quickly dominate a site, planting would allow the trees to become established before the brush would become overly competitive. Planting would require future maintenance until the trees have overtopped the brush. Over time, the trees would fill in the open corridor space, and provide connectivity of the upper level of the stand. This would benefit dispersal and foraging habitat for the Northern spotted owl and many other bird species. Roads that are not ripped or subsoiled may not require planting if trees are already becoming established in the roadbed. Planting may not be required if trees are already becoming established in the roadway.

<u>Tank traps</u>: Properly placed tank traps would eliminate most vehicle traffic from the proposed roadways. The traps must be positioned so the vehicles cannot go around them and gain access to the roadway. Other methods such as subsoiling should also be used to ensure that the road is undrivable and that vehicle access would be eliminated. It is expected that some ~~There are still~~ people would continue to drive these closed roads. Listing the road in the Federal Register as a closed road for law enforcement purposes would allow citing of unauthorized use of the road. Tank traps would be a better traffic deterrent than gates or posted roads.

<u>Machinery use:</u> A minor negative impact on wildlife would be direct mortality/injury. Bulldozers, trucks, or other heavy equipment could run over some of the small less mobile wildlife species. Some species could be buried incidentally during earth moving activities. There is also the potential for fuel/lubricant leakage or spillage. Wildlife species could come in contact with fuel or lubricant which would cause negative consequences.

<u>Other effects:</u> Reestablishing vegetation growth within the road prism would decrease the edge and barrier effect of roads, and would reconnect the terrestrial habitat. Over the long term the road corridor would fill in with trees and forest vegetation. This would provide increased nesting and foraging opportunities for birds. For example, there would be decreased predation of songbirds that depend on the forest interior for nesting.

Structural microhabitat variables that were identified as potentially limiting to amphibians near forest edges included: canopy cover, litter depth, understory vegetation density, and cover structures such as down logs (deMaynadier and Hunter 1998). The proposed action would restore these variables over the long term providing potential habitat and areas with unimpeded passage.

The ability for ***large material delivery*** would benefit wildlife including small mammals, salamanders, snakes, and lizards. This material would be utilized instream by some wildlife species. Other species would utilize the large material while moving through the area, as temporary cover, or for foraging opportunities. The material would also provide a transitional zone between the uplands and stream.

Full decommissioning would reduce the ***road density*** of the subwatershed. There would be a positive effect on big game from reduced human disturbance and harassment. This would have a positive affect on people who prefer to hunt behind closed road systems, and a negative affect on those who prefer to use roads while hunting. There seems to be general hunter acceptance of closures as management tools (Lyon and Ward 1982). Closing roads would have a positive effect by reducing the mortality/injury of individuals which would increase wildlife numbers in the long term.

Long term positive affects to wildlife would be the restoration of ***aquatic and terrestrial habitat connectivity*** and the reduction in open ***road density*** in the subwatershed. There are no expected long term significant negative impacts associated with the Proposed Action for any wildlife species. Negative impacts from the Proposed Action would be short term. The major short term impact of noise disturbance would be mitigated by the appropriate timing restrictions.

Cumulative Effects

Full decommissioning of roads and restoring ***aquatic and terrestrial connectivity*** should restore the continuity of these habitats over time and provide relatively unimpeded passage for all aquatic and riparian associated wildlife species. This should help restore genetic exchange between isolated wildlife populations which have been isolated by human actions, and facilitate natural recolonization of habitats from which species have been extirpated by human caused or natural events. Minimizing human caused barriers to genetic exchange and recolonization should insure that the associated wildlife populations remain as vigorous and resilient as possible.

Consultation

The Proposed Action of full road decommissioning at the three sites would be considered a “may affect not likely to adversely affect” for the Northern spotted owl and marbled murrelet due to noise disturbance. It is a “may affect” as project work could occur during the nesting season and could generate noise above ambient levels. It is a “not likely to adversely affect” as it would not affect existing suitable habitat and would be restoring habitat connectivity in the long term.

Road decommissioning was included in the Long Duration, Moderate Noise Project Section of the Coos Bay District Biological Assessment for FY96-2002 Programmatic Projects. The U.S. Fish and Wildlife Section concurred with these determinations in a Biological Opinion (#1-7--98-F-079) issued February 18, 1998. (Both documents hereby incorporated by reference). Implementation of the following Terms and Conditions is required to be in compliance with the Biological Opinion.

> Crane Creek Road: No work will occur from 1 April through 5 August. There will also be a daily timing restriction from 6 August through 15 September where work will be scheduled to occur no earlier than 2 hours after sunrise and no later than 2 hours before sunset.

Moore Creek Road: No work will occur from 1 March through 5 August. There will also be a daily timing restriction from 6 August through 15 September where work will be scheduled to occur no earlier than 2 hours after sunrise and no later than 2 hours before sunset.

Beaver Creek Road: This road would have a daily timing restriction from 1 April through 15 September where work will be scheduled to occur no earlier than 2 hours after sunrise and no later than 2 hours before sunset.

Aquatic Conservation Strategy (ACS) Objectives

The Proposed Action alternative would help to attain ACS objectives. Removing culverts and restoring the natural bank and bottom contour of streams would restore spatial and temporal connectivity of aquatic and terrestrial habitats, would restore the physical integrity of stream banks and bottoms and would restore the timing, storage and transport of sediments by removing the barriers created by culverts. Subsoiling roads would improve infiltration rates which would help to restore in-stream flows and subsequent patterns of sediment, nutrient and wood routing. Subsoiling would also help to restore the species composition, the structural diversity of riparian areas and habitat to support well-distributed populations of riparian-dependent species by decompaction of the road surface to allow vegetation to re-establish and provide ***habitat connectivity*** .

Soils

<u>Direct/Indirect Effects</u>
The direct and indirect effects of the proposed action would be the decompaction of the soils under the existing roadway. Subsoiling would reduce the amount of recovery time necessary for restoration of soil productivity and restore some hydrologic function. The removal of culverts and fill would not only restore hydrologic conductivity to the streams but allow for unrestricted deposition of sands and gravels to the stream channel. Seeding and mulching would replenish some of the lost organic matter which is vital to the reduction of soil compaction and renew fertility.

<u>Cumulative Effects</u>
The cumulative effects of the proposed action would be an increase in soil productivity and some restoration of hydrologic function.

Port-Orford Cedar Management

Port-Orford cedar does not grow in this area ,therefore, there are no effects for this alternative.

Botanical Resources including Noxious Weeds

Direct, Indirect, and Cumulative

The pulling of noxious weeds will kill them and prevent further seed production. If you cut these weeds down it will result in root resprouts. Resprouts will result in a healthier and maturer plant within a year or two verses germinates. Seeding and mulching provide competition to the noxious weed seed bed and will help limit the amount of germinates. Planting of other vegetation will both provide competition and help provide shade which limits sprouting and can ultimately shade out those noxious weeds that sprouted, thus killing them. New seedlings take longer to mature and will be more spindly. This type of treatment will most likely result in the reduction/elimination of the presence of these noxious weeds on these roads.

Soils

No direct or indirect effects would be anticipated

Life, Health and Safety

The only access available along the treated roads will be by foot. The average ***road densities*** in the Westfork Smith River Watershed will decrease from 4.0 to 3.7 miles/sq miles.

Alternative A: Road Decommissioning

Aquatic Habitat/ Aquatic Species (including Special Status Species)

Refer to the analysis of the No Action Alternative

Stream Channels, Wetlands and Riparian Habitats

Refer to the analysis of the No Action Alternative

Hydrology

Refer to the analysis of the No Action Alternative

Wildlife

Direct and Indirect Effects

Tank traps and machinery use: See Environmental Consequences under Proposed Action.

Other effects: This alternative would achieve the EA objective to reduce ***road densities***. There would be a positive effect on big game from reduced human disturbance and harassment. This would have a positive affect on people who prefer to hunt behind closed road systems, and a negative affect on those who prefer to use roads while hunting. There seems to be general hunter acceptance of closures as management tools (Lyon and Ward 1982). Closing roads would have a positive effect by reducing the mortality/injury of individuals which would increase wildlife numbers in the long term.

Cumulative Effects
This alternative would not achieve the ***terrestrial connectivity*** objective as the roadway would still be in place. The compacted roadbeds would prevent vegetative growth of trees and large woody shrubs in the prism for up to 30 years. Although adult amphibians are capable of overland travel, research strongly suggests that forest roads are serious barriers to overland migration for many species (deMaynadier and Hunter 1995). Species such as the Southern torrent salamander would remain effectively isolated from adjacent populations. Even species such as Pacific giant salamanders and tailed frogs which are capable of overland travel as adults, would be at much greater risk of mortality from hostile environmental conditions and predation. Retaining the road prism would effectively isolate populations of many wildlife species.

Aquatic Conservation Strategy (ACS) Objectives

This alternative would not help to attain ACS objectives. Leaving culverts in place would not restore the natural bank and bottom contours of streams, the spatial and temporal connectivity of aquatic and terrestrial habitats, or the timing, storage and transport of sediments until the culverts plugged, rusted or failed in some manner. The restoration of infiltration rates which influence in-stream flows and subsequent patterns of sediment, nutrient and wood routing would not occur for approximately 40 years after the road was blocked. The species composition, structural diversity and habitat of riparian areas would not be restored for approximately 40 years or longer until the road surface was decompacted by naturally seeded vegetation.

Soils

No direct or indirect effects would be anticipated

Port-Orford Cedar Management

Port-Orford cedar is not in this area therefore there are no affects for this alternative.

Botanical Resources including Noxious Weeds

Direct, Indirect, and Cumulative Effects
Noxious weeds on the roads would continue being a seed source and spreading. Current rates of spread will continue, with a possible reduction due to the blockage of the road. Vehicles are one of the primary spreaders of seeds. However, this can be more than offset due to new sites becoming established on the freshly disturbed slide paths and debris piles. In which case current rates of spread could increase. If the roads are allowed to grow over then these weeds could become shaded and die. The seed beds will remain viable for many years, possibly up to 80 years,

and can germinate in response to any act of God or man that exposes soil and/or increases sunlight.

Life, Health and Safety

The only access available along the treated roads will be by foot.

Alternative B: Road Obliteration

Aquatic Habitat/ Aquatic Species (including Special Status Species)

Refer to the analysis of the Proposed Action

Stream Channels, Wetlands and Riparian Habitats

Refer to the analysis of the Proposed Action

Hydrology

Refer to the analysis of the Proposed Action

Wildlife

Direct and Indirect Effects

Removing culverts, mulching, planting, and machinery use: See Environmental Consequences under Proposed Action.

Recontouring roadway: There would not be additional positive benefits to wildlife from recontouring Crane, Moore or Beaver roadways. ***Terrestrial connectivity*** would be restored from the methods listed under the Proposed Action so the additional treatment of recontouring would not be required. The three sites do not have sensitive habitats that would be restored if the roadway was recontoured. The economic cost of this method is not warranted on these roads; the money that would be used for this method could be spent to meet our objectives at other project locations.

In general, this method would have positive benefits to wildlife for road prisms that are not on steep terrain or unstable slopes. Recontouring would connect the edges of the roadway and restore the original slope of the ground. This would restore ***terrestrial connectivity*** over time. Recontouring would also benefit the site in the following ways: it would eliminate soil compaction; eliminate surface runoff and its associated sedimentation; facilitate tree and other plant establishment and growth; reduce the ***road density***; and would eliminate the physical presence of the roadway so the road would be effectively blocked from vehicle traffic. This alternative would also reduce human disturbance, harassment, and direct mortality/injury to wildlife from vehicle traffic.

Negative effects from obliteration could include decreased stability and increased sedimentation if work occurs on already unstable roadways (refer to Soil Scientist comments for further discussion). Although this alternative should have environmental benefits through the complete removal of a road, the benefits must be weighed against the economic cost. For most roadways in the Umpqua Resource Area, the methods for Full Decommissioning would adequately meet wildlife objectives.

Cumulative Effects

Obliteration (if implemented on suitable sites) of the road and the restoration of ***aquatic and terrestrial connectivity*** should restore the continuity of these habitats over time and provide relatively unimpeded passage for all aquatic and riparian-associated wildlife species. This should help restore genetic exchange between small wildlife populations which have been isolated by previous human actions, and facilitate natural recolonization of habitats from which species have been extirpated by human caused or natural events. Minimizing human caused barriers to genetic exchange and recolonization should insure that the associated wildlife populations remain as vigorous and resilient as possible.

Aquatic Conservation Strategy (ACS) Objectives

This alternative would help to attain ACS objectives. Removing culverts and restoring the natural bank and bottom contour of streams would restore spatial and temporal connectivity of aquatic and terrestrial habitats, would restore the physical integrity of stream banks and bottoms and would restore the timing, storage and transport of sediments by removing the barriers created by culverts. Subsoiling roads would improve infiltration rates which would help to restore in-stream flows and subsequent patterns of sediment, nutrient and wood routing. Subsoiling would also help to restore the species composition, the structural diversity of riparian areas and habitat to support well-distributed populations of riparian-dependent species by decompaction of the road surface to allow vegetation to re-establish and provide ***habitat connectivity*** .

Soils

Refer to the analysis of the Proposed Action

Port-Orford Cedar

Port-Orford cedar is not in this area therefore there are no affects for this alternative.

Botanical Resources including Noxious Weeds

Noxious Weeds

Noxious weeds on the road system should be pulled from the ground. Machinery should try and work in/on these areas last to avoid spreading the seed bed, and ground disturbance at the original plant site(s) should be kept to a minimum. Any reshaping of the ground needs to remember that covering the site with dirt is acceptable, but moving of the dirt from that site to another is not unless it will be well buried. Care needs to be taken in moving the dirt because the seeds in the dirt will be spread. All disturbed sites need to be heavily seeded and regularly mulched at the end of all activities.

<u>Direct, Indirect, and Cumulative Effects</u>
The pulling of noxious weeds will kill them and prevent further seed production. If you cut these weeds down it will result in root resprouts. Resprouts will result in a healthier and maturer plant within a year or two. Seeding and mulching provide competition to the noxious weed seed bed and will help limit the amount of germinates. Planting of other vegetation will both provide competition and help provide shade which limits sprouting and can ultimately shade out those noxious weeds that sprouted, thus killing them. New seedlings take longer to mature and will be more spindly. This type of treatment will most likely result in the reduction/elimination of the presence of these noxious weeds on these roads.
Refer to the analysis of the Proposed Action

Life, Health and Safety

The only access available would be by foot.

SECTION V
List of Preparers

The following is a list of the preparers of the Environmental Assessment for " a proposal to fully Decommission selected roads within the Umpqua Resource Area of the Coos Bay District."

Don Porior,	District Engineer.(ID Team Leader)
Karen Smith	Umpqua RA, Fisheries Biologist
Kathy Wall,	Umpqua RA, Wildlife Biologist
Scott Knowles,	Umpqua RA, Noxious Weed Coordinator
Deanna Dooley,	Umpqua RA, Soil Scientist/Geologist
Mark Storzer,	Umpqua RA Hydrologist
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SECTION VI
References

Brown, E.R. (ed.). 1985. Management of wildlife and fish habitats in forests of western Oregon and Washington. Publ. No. R6-F&WL-192-1985. USDA, F.S. Pacific Northwest Region, Portland, Oregon.

Brittingham, M.C., and S.A. Temple. 1983. Have cowbirds caused forest songbirds to decline? Bioscience 33:31-35.

Cole, E.K., M.D. Pope, and R.G. Anthony. 1997. Effects of road management on movement and survival of Roosevelt elk. J. Wildl. Manage. 61(4):1115-1126.

Csuti, B., A.J. Kimerling, T.A. O'Neil, et al. 1997. Atlas of Oregon wildlife: distribution, habitat, and natural history. Oregon State University Press. Corvallis, Oregon. 492 pg.

deMaynadier, P.G. and M.L. Hunter Jr. 1995. The relationship between forest management and amphibian ecology: a review of the North American literature. Environ. Rev. 3:230-261.

deMaynadier, P.G. and M.L. Hunter Jr. 1998. Effects of silvicultural edges on the distribution and abundance of amphibians in Maine. Conserv. Biology 12(2): 340-352.

Fahrig, L., J.H. Pedlar, S.E. Pope, P.D. Taylor, and J.F. Wegner. 1995. Effect of road traffic on amphibian density. Bio. Conserv. 73: 177-182.

Gates, J.E. and L.W. Gysel. 1978. Avian nest dispersion and fledging success in field forest ecotones. Ecology 59:871-883.

Gibbs, J.P. 1998. Amphibian movements in response to forest edges, roads, and streambeds in southern New England. J. Wildl. Manage. 62:(2)584-589.

Greacen, E.L., and R. Sands. 1980. Compaction of forest soils - a review. Aust. J. Soil Res. 18:163-189.

Harris, L.D. 1984.The fragmented forest: island biogeography theory and the preservation of biotic diversity. Univ. of Chicago Press, Illinois. 211 pp.

Lehmkuhl, J.F., and L.F. Ruggiero. 1991. Forest fragmentation in the Pacific Northwest and its potential effects on wildlife. In: Ruggiero, L.F., K.B. Aubry, A.B. Carey, M.H. Huff (techn. coord.). Wildlife and vegetation of unmanaged Douglas-fir forests. U.S. Dept. Ag., Forest Service, PNW Research Station, Portland, Oregon. GTR PNW-GTR-285. pp 35-46.

Lyon, L.J. and A.L Ward. 1983. Elk and land management. In: Thomas, J.W. and D.E. Toweill (ed). Elk of North America, ecology and management. Stackpole Books, Harrisburg, Pa. pp 443-477.

Noss, R.F. and A.Y. Cooperrider. 1994. Saving nature's legacy. Island Press, Washington, D.C. 416 pp.

Oakley, A., et al. 1985. Riparian zones and freshwater wetlands. In: Brown, E.R. (ed.).

Management of wildlife and fish habitats in forests of western Oregon and Washington. Publ. No. R6-F&WL-192-1985. USDA, F.S. Pacific Northwest Region, Portland, Oregon. pp 57-80.

Pope, M.D., and R. Anthony. 1994. Roosevelt elk habitat use in the Oregon coast range. Cooperative Research Unit, Oregon State University, Corvallis, Oregon.

Ruggiero, L.F., K.B. Audbry, S.W. Buskirk, et al. 1994. American marten, fisher, lynx, and wolverine in the Western United States. USDA F.S., Fort Collins, Col. GTR-RM-254. 184 pp.

Stussy, R.J., W.D. Edge, and T.A. O'Neil. 1994. Survival of resident and translocated elk in the Cascade Mountains of Oregon. Wildl. Soc. Bull. 22:242-247.

Thomas, J.W. (ed). 1979. Wildlife Habitats in Managed Forests - the Blue Mountains of Oregon and Washington. Ag. Handbook No. 553. USDA, For. Serv., Portland, Oregon. 512 pp.

Thomas, J.W., J.D. Gill, J.C. Pack, W.M. Healy, and H.R. Sanderson. 1976. Influence of forestland characteristics on spatial distribution of hunters. J. Wildl. Manage. 40:500-506.

USDI Bureau of Land Management. 1995. Coos Bay District Record of Decision and Resource Management Plan (RMP). North Bend, Oregon.

Wisdom, M.J., L.R. Bright, C.G. Carey, et al. 1986. A model to evaluate elk habitat in western Oregon. Publ. No. R6-F&WL-216-1986. USDA For. Serv., PNW, Portland, OR. 36 pp.